AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE OF PAGES
J	1 of 2

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO.(If applicable)
0001	06-Feb-2004	W68MD9-3295-4333	

6. ISSUED BY	CODE	7. ADMINISTERED BY (If other than item 6)	CODE
USA ENGINEER DISTRICT, SEATTLE ATTN: CENWS-CT 4735 EAST MARGINAL WAY SOUTH SEATTLE WA 98134-2329	W912DW	**See Item 6**	

8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)		
	X	9A. AMENDMENT OF SOLICITATION NO. W912DW-04-R-0007
	X	9B. DATED (SEE ITEM 11) 27-Jan-2004
		10A. MOD. OF CONTRACT/ORDER NO.
		10B. DATED (SEE ITEM 13)
CODE / FACILITY CODE		

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

[X] The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer [ ] is extended, [X] is not extended.

Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning 1 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

[ ] A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

[ ] B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).

[ ] C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:

[ ] D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor [ ] is not, [ ] is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

TITLE: Design Build Electrical Upgrade, Howard Hanson Dam, Washington

1. This Amendment (0001) provides for the following changes:

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) TEL: EMAIL:	
15B. CONTRACTOR/OFFEROR _____ (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY _____ (Signature of Contracting Officer)	16C. DATE SIGNED 06-Feb-2004

EXCEPTION TO SF 30
APPROVED BY OIRM 11-84

30-105-04

STANDARD FORM 30 (Rev. 10-83)
Prescribed by GSA
FAR (48 CFR) 53.243

A. This amendment provides for the following changes:

(1) Revision of the Caution to Offerors in the Table of Contents statement.

(2) Revision to Section 00890 OUTLINE SPECIFICATION

(3) Revision to Section 01005 SITE SPECIFIC SUPPLEMENTARY REQUIREMENTS.

(4) Revision to Section 01702 AS BUILT RECORDS AND DRAWINGS

B. The attached revised sections are to be replaced in their entirety. Specifications changes are generally identified, for convenience, either by strikeout for deletions, and double underlining of text for additions or a single dark line in the right hand margin. All portions of the revised or new pages shall apply whether or not changes have been indicated.

C**. SITE VISIT HAS BEEN CHANGED TO 17 FEBRUARY 2004, AT 10:00 A.M. CONTRACTORS ARE TO ASSEMBLE AT TACOMA HEADWORKS PARKING AREA AND WILL BE TRANSPORTED THROUGH THE WATERSHED IN GOVERNMENT FURNISHED TRANSPORTATION.**

D. The proposal submittal time and date remains March 2, 2004 at 2:00 p.m. LOCAL TIME.

F. NOTICE TO OFFERORS: Offerors must acknowledge receipt of this amendment by number and date on offer or by telegram. Please mark outside of envelope in which your offer is enclosed to show amendment received.

Encl:
Caution to Offeros (revised)
Section 00890 (revised)
Section 01005 (revised)
Section 01702 (revised)

THIS PROCUREMENT IS:

Open to both Large and Small Business

SITE VISIT:

A site visit is scheduled on Tuesday, 17 February 2004, 10:00 a.m. Contractor's are to assemble at the Tacoma Headwork parking area and will be transported through the watershed in Government furnished transportation. The map is attached to the site visit location.

- OFFERORS ARE URGED and expected to inspect the site where construction is to be performed and to satisfy themselves as to all general and local conditions which may affect the cost of performance of the contract, to the extent, such information is reasonably obtainable. In no event, will a failure to inspect the site constitute grounds for withdrawal of a bid after opening or for a claim after award of the contract.

BIDDING DOCUMENTS: Register for solicitations at the Internet site: http://www.nws.usace.army.mil/ct/

PLANHOLDER'S LISTS: Lists may also be obtained from the same site

FOR INQUIRIES, CONTACT THE FOLLOWING INDIVIDUAL(S) Monday through Friday between the hours of 8:00 a.m. and 3:30 p.m.:

ADMINISTRATIVE MATTERS:

Alex Smith (206)764-6804 FAX: (206)764-6817 j.alex.smith@usace.army.mil

TECHNICAL INQUIRIES are to be submitted via the Internet. A password is required. Bidders can obtain their password by going to (www.projnet.org), clicking on **Bidder Inquiry**, filling out the form provided, and then clicking **Continue**.

Upon receipt of your password, login to (www.projnet.org) and click on **Bidder Inquiry**. Select **NWS Seattle District**, click **Continue**. Select project, click **Continue**. Select **Bidder Inquiry** phase, click **Continue**.

Enter your question and click **Submit Inquiry**. You will receive an acknowledgement of your question via email, followed by an answer to your question after it has been processed by our technical team.

Process for Bidder Inquiries----

Bidder Inquires are technical or administrative questions from Qualified Contractors on solicitations that are advertised on the Seattle District Contracting Public Home Page.

The CORPS has developed the DrChecks Bidder Inquiries Module to simplify this process.

Since all of Seattle District Army CORPS solicitations are available to qualified Contractors on the Internet, it follows that all Contractor's technical questions concerning items within those solicitations would be submitted and answered over the Internet.
Instructions and web links are provided to Contractors on the Public Home Page and in the Solicitation. Required passwordare provided upon registration.

The Contractor goes to the projnet website, enters his password and submits his question.
He receives an e-mail notification when his question is entered into the DrCheck data base (which is instantaneous).

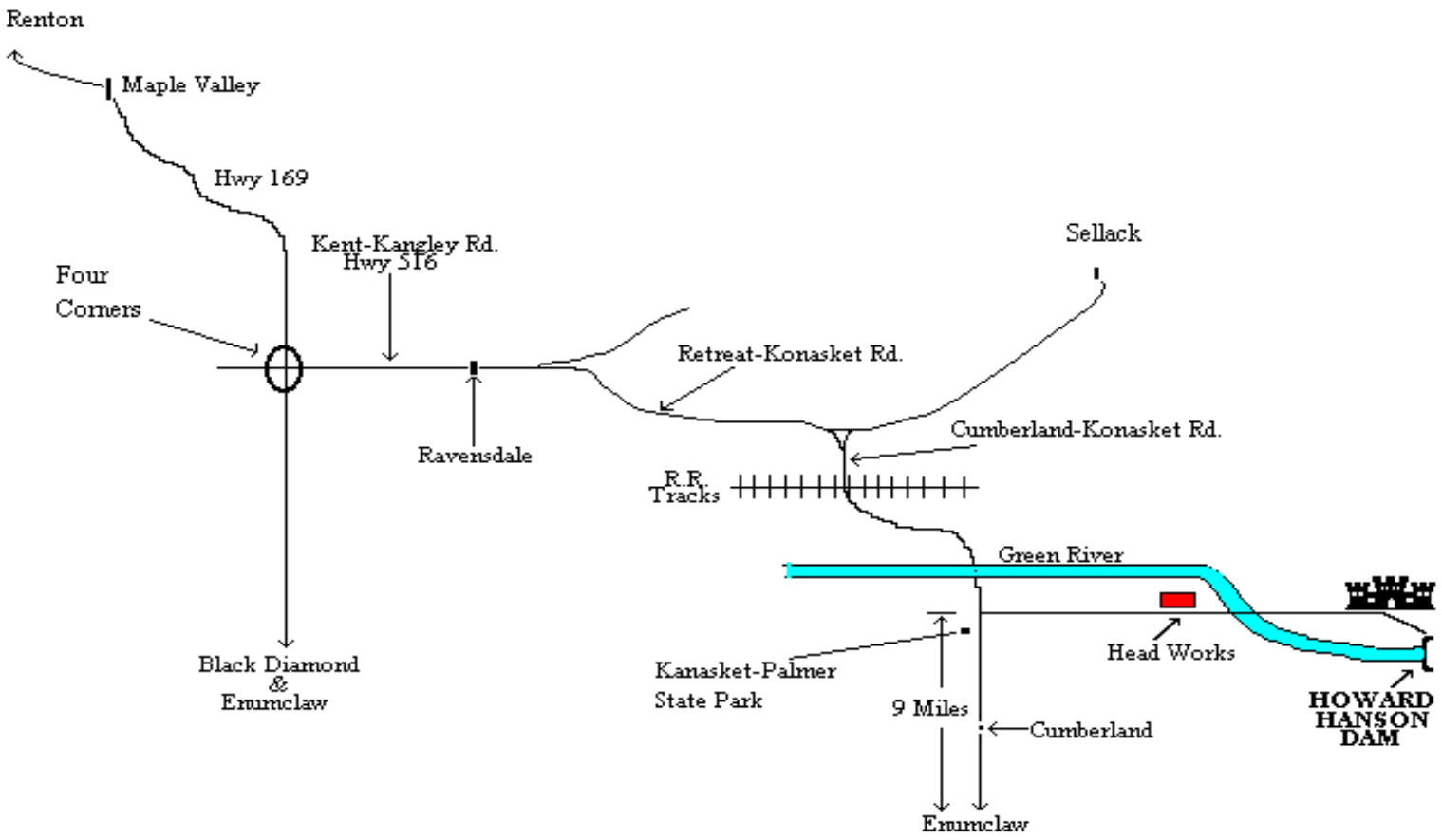
Designated designers and managers also receive notification of pending questions. They enter the DrCheck data base and evaluate the pending question. One question may have a number of evaluations. These evaluations are for internal use only and are not automatically forwarded to the bidder.

A chosen arbitrator reads all evaluations, does additional research and coordination, and formulates the official response. The arbitrator closes the item and the system e-mails the official response to the Contractor.

The Contractor sees only his original question, and the official response. He does not see any other evaluations or correspondence with competing contractors.

(Mail) Seattle District Corps of Engineers, P.O. Box 3755, Seattle, WA 98124-3755
(Street) 4735 E. Marginal Way S., Seattle, WA 98134-2385

MAP TO HOWARD A. HANSON DAM



*** FROM ENUMCLAW**, FOLLOW SIGNS TO KANASKET-PALMER STATE PARK & LOOK FOR THE TACOMA HEADWORKS SIGN ON THE RIGHT

*** FROM I-5 SOUTHBOUND**, TAKE 405 TOWARDS RENTON
* FROM 405, TAKE ENUMCLAW / MAPLE VALLEY EXIT TO HWY 169
* HEAD TOWARDS MAPLE VALLEY, BLACK DIAMOND, ENUMCLAW ON HWY 169
* AT "FOUR CORNERS", TAKE A LEFT ONTO KENT-KANGLEY ROAD(SE 272nd)
* FOLLOW MAP FROM THERE(or signs to Palmer/Kanasket State Park) , TURNING RIGHT ON RETREAT-KANASKET RD., THEN RIGHT ON CUMBERLAND-KANASKET RD., THEN AFTER YOU CROSS THE BRIDGE OVER GREEN RIVER, TAKE THE FIRST LEFT ON TOP OF THE HILL TO THE TACOMA HEADWORKS FACILITY.
* STOP AT TACOMA HEADWORKS GATE & THEY WILL CALL US ON YOUR ARRIVAL.

TABLE OF CONTENTS

CAUTION TO OFFERORS

SECTION TITLE

SF1442 - Pages 00010-1 thru 00010-5 (00010-3 is reserved for use at a later time)
& Subcontracting Plan if applicable*, Pages 00010-6 thru 0010-12

00100 Instructions, Conditions and Notice to Offerors

00110 Proposal Submission and Evaluations

00600 Representations and Certifications and other Statements of Offerors, and Pre-Award Information

00700 Contract Clauses

00800 Special Clauses, which include the following:

a) Special Clauses Pages 00800-1 thru 00800-00800A,00810,00820, 00820A1 and 00890

b) Davis-Bacon General Wage Decision No.WA20030001, Modification 1

01000 Technical Specifications:

01001 thru 01705

RETURN THE FOLLOWING WITH YOUR OFFER:

SF1442 - Pages 00010-1 thru 00010-5 (00010-3 is reserved for use at a later time)

Section 00600 - Representations and Certifications and Pre-Award Information

20% Bid Bond

*Large business are required to submit a "Small Business and Small Disadvantaged Business Subcontracting Plan," with the proposal. See Notice to large Businesses, Page 00010-6.

** BONDS – Matter of All Seasons Construction, Inc. GAO Decision B-291166.2
Bid Bonds must be accompanied by a Power of Attorney containing an original signature from the surety, which must be affixed to the Power of Attorney after the Power of Attorney has been generated. Computer generated and signed Power's of Attorney will only be accepted if accompanied by an original certification from a current officer of the surety attesting to its authenticity and continuing validity.

SECTION 00890

OUTLINE SPECIFICATIONS

TABLE OF CONTENTS

PARAGRAPH NO.	PARAGRAPH TITLE
1.0	GENERAL
2.0	SPECIFICATIONS
	Division 2: Sitework
	Divisions 3: through 15 :Not Used
	Division 16: Electrical

This page intentionally left blank.

SECTION 00890

OUTLINE SPECIFICATIONS

1.0 GENERAL

a. Purpose

The outline specifications listed hereinafter generally cover the range of products/work to be included in the project. The goals are:

- To indicate the areas of work in this project.
- To broadly indicate the work within each section.
- To indicate minimum acceptable requirements and to further detail the minimum requirements.
- To indicate a required or pertinent part of a specific guide specification.

These outline specifications do not attempt to address product approval, shop drawings, actual installation, or other items covered in the referenced specifications.

b. Prescriptive Requirements

Where a referenced UFGS section outline narrative contains specific edited or annotated passages from the guide section or other criteria which precludes use of other alternate choice(s) within the guide specification section this prescriptive requirement shall be mandatory and the other respective choices, materials or products shall be deleted from the specification requirements.

c. Editing of Guide Specifications

Refer to Section 00820 STATEMENT OF WORK under Attachment 1, Technical Specifications for procedure for incorporating the guide specifications into the contract documents.

2.0 SPECIFICATIONS

Guide specifications listed below and identified by TM, TI, or UFGS are available as specified herein. (Where more than one version of a UFGS is available, use the Army version, usually identified with an “A” at the end of the section number.) These specifications are issued by the Office of the Chief of Engineers. The Contractor is to be aware that these specifications represent the latest versions available at the time of issue of this RFP and are to be used in preparing specifications for this project. Specifications are available in electronic format where noted below.

- Uniform Facility Guide Specifications (UFGS).

http://www.ccb.org/docs/ufgshome/UFGSToc.htm

DIVISION 2: SITEWORK

02220 Demolition

All demolition work shall conform to EM 385-1-1 U.S. Army Corps of Engineers Safety and Health Requirements Manual. Work includes demolition, removal, and disposal of all existing distribution system materials. Burning and explosives shall not be permitted. Equipment and labor necessary to safely demolish and remove the existing aerial distribution system shall be provided.

02231 Clearing and Grubbing

The Contractor shall dispose of all organic material other than saleable timber resulting from clearing ~~and grubbing~~ operations by one or more of the following methods:

a. Waste Site. Debris shall be disposed of at a legal location outside of Government-controlled land. Contractor shall obtain approval of haul route and disposal site.

b. Chipping. Chipping of woody matter shall be done by machines. Wood chips larger than 6 square inches and thicker than 1/2 inch shall be disposed of in accordance with paragraph "a. Waste Site." Smaller sized woody matter may be disposed of by spreading the chips uniformly over selected areas within the project right of way, as directed, in loose layers not more than 3 inches in thickness.

Cut off flush with or below the original ground surface trees, stumps, roots, brush, and other vegetation in areas to be cleared, except for trees and vegetation indicated or directed to be left standing.

Grubbing will not be required in cleared areas.

All timber except saleable timber removed from the project site shall become the property of the Contractor. Saleable timber shall conform to the following specification:

Saleable Timber (Para 3.6.1)

Consider felled timber from which saw logs and fuelwood can be produced as saleable timber. Sawlogs and fuelwood will remain the property of either the Government or City of Tacoma, depending on location within the project right of way. This saleable timber shall be stockpiled on sites in areas free of debris where it does not interfere with the construction project and will be accessible (within 50 feet of the road) at a later date.

Logs shall be sorted by size and placed in separate decks for sawlogs and fuelwood. Trees shall be cut from the stump and limbed to the top before decking. Whenever possible logs shall be left in tree length. If trees are too large to be handled tree length, cut 40-foot logs plus 12 inches trim allowance from the butt. The minimum size for a sawlog is 6 inches Diameter Inside Bark (DIB) on the small end and 16 foot in length. All logs not suitable for sawlogs shall be placed in a fuelwood deck. The minimum size for a fuelwood log is 5 inches diameter on the large end and 8 feet in length.

02231 Clearing and Grubbing (Cont.)

Roads and Utility Lines;
Roads shall be kept free of debris at all times. Trees and vegetation to be left standing shall be protected from damage incident to clearing, grubbing, and construction operations by the erection of barriers or by such other means as the circumstances require. Existing utility lines shall be protected from damage until the new line begins supplying power to the project. Notify the Contracting Officer immediately of damage to or an encounter with an unknown existing utility line. The Contractor shall be responsible for the repairs of damage to existing utility lines that are indicated or made known to the Contractor prior to start of clearing and grubbing operations.

02316 Excavation, Trenching, and Backfilling for Utility Systems

The Contractor shall perform excavation, preparation of pipe-laying surface, pipe bedding, backfilling and compaction for underground electrical conduit.

DIVISION 16: ELECTRICAL

16263 Diesel-Generator Set Stationary 100 – 2500kW, with Auxiliaries

SYSTEM DESCRIPTION

500 kW engine-generator set shall be provided and installed complete and totally functional, with all necessary ancillary equipment to include: air filtration; starting system; electrical system, protection and isolation; fuel system; cooling system; and engine exhaust system. This engine-generator set shall satisfy the requirements specified in the Engine-Generator Parameter Schedule.

Engine Generator Parameter Schedule

Power Rating	Industrial
Standby Rating	500 kW /625 kVA
Primary Rating	425 kW / 531.25 kVA
Power Factor	0.8 lagging
Engine-Generator Applications	stand-by power
Maximum Speed	1800 rpm
Heat Exchanger Type	fin-tube (radiator)
Governor Type	Electric Isochronous
Frequency	60 Hz
Voltage	480 volts
Phases	3 Phase, Wye

16263 Diesel-Generator Set Stationary 100 – 2500kW, with Auxiliaries (Cont.)

MATERIAL AND INSTALLATION

Engine-Generator Set Enclosure

The engine-generator set enclosure shall be corrosion resistant and fully weather resistant. The enclosure shall contain all set components and provide ventilation to permit operation at Service Load under secured conditions. Doors shall be provided for access to controls and equipment requiring periodic maintenance or adjustment. Removable panels shall be provided for access to components requiring periodic replacement. The enclosure shall be capable of being removed without disassembly of the engine-generator set or removal of components other than the exhaust system. The enclosure shall reduce the noise of the generator set to within the limits specified in the paragraph SOUND LIMITATIONS

Fuel Consumption

Engine fuel consumption shall be rated at 100% of Power Rating.

Size Range Net kW	% of Rated Output Capacity	Fuel Usage LBS./kWH
300 - 999	75 and 100	0.575
	50	0.600

Engine

The engine shall operate on No. 2-D diesel fuel conforming to ASTM D 975, shall be designed for stationary applications and shall be complete with ancillaries. The engine shall be a standard production model described in the manufacturer's catalog. The engine shall be naturally aspirated, turbocharged - aftercooled. The engine shall be 2-cycle and compression-ignition type. The engine shall be vertical in-line, V- or opposed-piston type, with a solid cast block or individually cast cylinders. Each block shall have a coolant drain port. The engine shall be equipped with an overspeed sensor.

Integral Main Fuel Storage Tank

The engine shall be provided with an integral main fuel tank. The tank shall be factory installed and provided as an integral part of the diesel generator manufacturer's product. The tank shall be provided with connections for fuel supply line, fuel return line, local fuel fill port, gauge, vent line, and float switch assembly. A fuel return line cooler shall be provided as recommended by the manufacturer and assembler. The temperature of the fuel returning to the tank shall be below the flash point of the fuel. The engine-generator set provided with weatherproof enclosures shall have its tank mounted within the enclosure. The fuel fill line shall be accessible without opening the enclosure.

Capacity

The tank shall have capacity of 38 gallons per hour to supply fuel to the engine for an uninterrupted 24 hour period at 100% rated load without being refilled.

16263 Diesel-Generator Set Stationary 100 – 2500kW, with Auxiliaries (Cont.)

Sound Limitations

The noise generated by the installed diesel generator set operating at 100 percent load shall not exceed the following sound pressure levels in any of the indicated frequencies when measured at a distance of 23 feet (7 meter) from the end of the exhaust and air intake piping directly along the path of intake and discharge for horizontal piping.

Frequency Band (Hz)	Maximum Acceptable Pressure Level (Decibels)
63	85.7dBA

AUTOMATIC TRANSFER SWITCH

Fully automatic operation shall be provided for engine-generator set starting and load transfer upon loss of normal source. Transfer switch shall be provided as part of the generator set and shall be in accordance with Section 16410 AUTOMATIC TRANSFER SWITCH AND BY-PASS/ISOLATION SWITCH.

16370 Electrical Distribution System, Aerial

FIELD TESTS

General

Field testing shall be performed in the presence of the Contracting Officer. The Contractor shall notify the Contracting Officer 10 days prior to conducting tests. The Contractor shall furnish materials, labor, and equipment necessary to conduct field tests. The Contractor shall perform tests and inspections recommended by the manufacturer unless specifically waived by the Contracting Officer. The Contractor shall maintain a written record of tests, which includes date, test performed, personnel involved, devices tested, serial number and name of test equipment, and test results. Field reports will be signed and dated by the Contractor.

Ground-Resistance Tests
Operating Tests
Sag and Tension Test
Pre-energization Services
    Reclosures
    Switches

16370 Electrical Distribution System, Aerial (Cont.)

MATERIALS AND INSTALLATION

Wood Poles;
Wood poles shall comply with ANSI O5.1, and shall be pressure treated in accordance with AWPA C4. Creosote preservatives shall not be used. Poles less than 50 feet in length, or classes 6 through 10, shall not be installed. Provision for communication services is required on the pole line. A vertical pole space of not less than 2 feet shall be reserved at all locations.

Conductors;
Medium-voltage line conductors of the Spacer Cable-Tree Wire type shall be used; they shall be of the factory-assembled, messenger-supported type, having a rated circuit voltage of 15kV. Insulation shall be cross-linked thermosetting polyethylene (XLP) or approved equivalent conforming to all applicable ICEA specifications. Messengers shall be zinc-coated steel, aluminum-clad-steel, copper-clad-steel, or composite-copper and copper-clad steel. Conductor material shall be AAC, AAAC, or ACSR. Conductors shall be installed in accordance with manufacturer's approved tables of sags and tensions.

Aluminum materials;
Aluminum shall not be used in contact with earth or concrete. Connectors and splices shall be of copper alloys for copper conductors, aluminum alloys for aluminum-composition conductors, and a type designed to minimize galvanic corrosion for copper to aluminum-composition conductors.

Crossarms;
Crossarms shall comply with RUS Bull 1728H-701 and shall be solid wood, distribution type, except cross-sectional area with pressure treatment conforming to AWPA C25, and a 1/4 inch, 45-degree chamfer on all top edges. Cross-sectional area minimum dimensions shall be 4-1/4 inches in height by 3-l/4 inches in depth in accordance with IEEE C2 for Grade B construction. Crossarms shall be not less than 8 feet in length.

Medium-Voltage Line Insulators;
Insulators shall comply with NEMA HV 2 for general requirements. Suspension insulators shall be used at corners, angles, dead-ends, and other areas where line insulators do not provide adequate strength. Where angles are greater than 15 degrees, provide double-arm with dead-end insulator construction.

Guy Assemblies;
No more than two strengths of guys should be used on the project, and all guys will be sized for the maximum loading tension of the line wherever conductor tensions are not balanced, such as at angles, corners, and dead-ends. Any pole where the angle of deviation of the line exceeds five degrees will be guyed. Where a single guy will not provide the required strength, or more guys shall be provided. The maximum permitted angle of deviation for a single angle guy installation (one guy installed on the bisect of line angle) is 45 degrees. For greater angles, a down guy installation in line with each direction of pull is required.

Pole Line Hardware;
Pole-line hardware shall be hot-dip galvanized steel.

16370 Electrical Distribution System, Aerial (Cont.)

Grounding and Bonding;
Ground rods shall be 3/4 inch in diameter by 10 feet in length of the sectional type driven full length into the earth. The maximum resistance of a driven ground rod shall not exceed 25 ohms under normally dry conditions. Non-current-carrying metal parts of equipment and conductor assemblies, such as medium-voltage cable terminations and messengers, operating mechanisms of pole top switches, panel enclosures, recloser frames (cases) and other non-current-carrying metal items shall be grounded. Additional grounding of equipment, neutral, and surge arrester grounding systems shall be installed at poles in accordance with IEEE C2.

Recloser;
Automatic circuit reclosers shall comply with IEEE C37.60 and shall be vacuum type, complete with devices, attachments, and accessories required for installation and operation and shall be suitable for mounting on a single pole. Reclosures shall be equipped with ground fault tripping equipment. Surge arrester protection shall be provided. Reclosure shall be installed after the metering equipment. Recloser installation shall be in accordance with manufacturer's requirements.

Group-Operated Load Interrupter Switch;
Manually operated load interrupter switch shall comply with ANSI C37.32 and shall be of the outdoor, manually-operated, three-pole, single-throw type. Switch shall be non-fused and shall be complete with necessary operating mechanisms, handles, and other items required for manual operation from the ground. Switch shall be installed after the recloser and in accordance with manufacturer's requirements.

Surge Arrester;
Surge Arresters shall comply with NEMA LA1 and IEEE C62.1, IEEE C62.2, and IEEE C62.11, and shall be provided for protection of aerial-to-underground transitions and automatic circuit reclosers. Surge Arresters shall be properly sized for equipment protection.

Connections Between Aerial and Underground Systems;
Underground cables shall be extended up poles in conduit to cable terminations. Cables shall be supported by devices separate from the conduit near their point of exit from the riser conduit. Risers shall be equipped with bushings to protect cables.

Connections To Utility Lines;
Contractor shall coordinate all work related to the connection of the new lines to the existing overhead lines owned by Puget Sound Energy. Contractor shall be responsible for all fees associated with this work.

16375 Electrical Distribution System, Underground

FACTORY TESTS

Factory tests shall be performed, as follows, in accordance with the applicable publications and with other requirements of these specifications. The Contracting Officer shall be notified at least 10 days before the equipment is ready for testing

Transformers: Manufacturer's standard routine, design and other tests in accordance with IEEE C57.12.00.

Transformers rated 200 kVA and above: Reduced full-wave, chopped-wave, and full-wave impulse test on each line and neutral terminal, in accordance with IEEE C57.98.

FIELD TESTS

General;
Field testing shall be performed in the presence of the Contracting Officer. The Contractor shall notify the Contracting Officer 10 days prior to conducting tests.

Medium-Voltage Preassembled Cable Test;
After installation, prior to connection to an existing system, and before the operating test, the medium-voltage preassembled cable system shall be given a high potential test. Direct-current voltage shall be applied on each phase conductor of the system by connecting conductors at one terminal and connecting grounds or metallic shieldings or sheaths of the cable at the other terminal for each test. Prior to the test, the cables shall be isolated by opening applicable protective devices and disconnecting equipment. The method, voltage, length of time, and other characteristics of the test for initial installation shall be in accordance with NEMA WC 74 for the particular type of cable installed, and shall not exceed the recommendations of IEEE Std 404 for cable joints unless the cable and accessory manufacturers indicate higher voltages are acceptable for testing. Should any cable fail due to a weakness of conductor insulation or due to defects or injuries incidental to the installation or because of improper installation of cable, cable joints, terminations, or other connections, the Contractor shall make necessary repairs or replace cables as directed. Repaired or replaced cables shall be retested.

MATERIALS AND INSTALLATION

Cable Terminating Cabinet;
Cable terminating cabinets shall be pad-mounted, hook-stick operable, deadfront construction conforming to the requirements of IEEE ANSI/IEEE C37.20.3, Category A. Cabinets shall be provided with 200A loadbreak junctions and elbow-type separable loadbreak connectors, cable parking stands, and grounding lugs.

Cables;
Medium voltage cables shall be soft drawn copper, single conductor type, Type MV rated for 15kV and shall have EPR insulation with 133 percent insulation level. Cables shall be rated for use in duct applications. Neutral conductors shall be of the same materials as the phase conductors.

16375 Electrical Distribution System, Underground (Cont.)

Conduit and Ducts;
Concrete encased medium voltage ducts shall be Schedule 40; direct buried ducts and risers shall be Schedule 80. Ducts placed in roads shall be concrete encased.

Surge Arrester;
Surge Arresters shall comply with NEMA LA1 and IEEE C62.1, IEEE C62.2, and IEEE C62.11, and shall be provided for protection of aerial-to-underground transitions and transformers. Surge Arresters shall be properly sized for equipment protection.

Transformer;
Contractor shall provide two pad-mounted transformers. Each transformer shall be compartmental type, self-cooled, tamper resistant, loop-feed type suitable for use outdoors. The primary shall be dead-front construction with loadbreak switching; oil-immersed, current-limiting, bayonet-type fuses; medium-voltage separable loadbreak connectors; and surge arresters. It shall be of the sealed tank construction. Transformers shall have four 2-1/2 percent rated kVA high-voltage taps, two above and two below rated primary voltage. A tap changing mechanism shall be provided for accurate voltage adjustment without opening the transformer tank. The transformers shall be rated as follows:

KVA: 500KVA
Phase: 3-phase
Frequency: 60 Hz
Temp. Rise: 60^{o} C
Primary Voltage: 12470V-Delta
Primary BIL: 95kV
Secondary Voltage: 480-Wye
Secondary BIL: 95kV
Percent Impedance Voltage: 4.0
Coolant: Insulating oil

KVA: 75KVA
Phase: 3-phase
Frequency: 60 Hz
Temp. Rise: 60^{o} C
Primary Voltage: 12470V-Delta
Primary BIL: 95kV
Secondary Voltage: 208-Wye
Secondary BIL: 95kV
Percent Impedance Voltage: 4.0
Coolant: Insulating oil

The transformer shall comply with the latest applicable standards of the National Electrical Manufacturers Association (NEMA) and the American National Standards Institute (ANSI).

16375 Electrical Distribution System, Underground (Cont.)

Liquid Dielectrics;
Liquid dielectrics for transformers shall be non-polychlorinated biphenyl (PCB) mineral-oil or less-flammable liquid. Nonflammable fluids shall not be used. Tetrachloroethylene (perchloroethylene) and 1, 2, 4 tetrachlorobenzene fluids shall not be used. Transformer dielectric shall be less than 2 ppm PCB content.

Grounding and Bonding;
A ground ring consisting of bare copper conductors and ground rods shall be installed around pad-mounted equipment. Ground rods shall be installed at all manholes. Ground rods shall be 3/4 inch in diameter by 10 feet in length of the sectional type driven full length into the earth. The maximum resistance of any grounding system shall not exceed 25 ohms under normally dry conditions. Non-current-carrying metal parts of equipment, manholes, and conductor assemblies shall be grounded.

Connections To Buildings;
Underground cables shall be extended to the buildings and shall be connected to the first applicable termination point in each building. Exterior conduits shall interface with the stubout of the building's conduit system 5 feet outside the building.

16410 Automatic Transfer Switch and By-Pass/Isolation Switch

The Automatic Transfer Switch shall be electrically operated and mechanically held in both operating positions. It shall be suitable for use in standby systems and shall be provided as a component of the engine-generator-set.

16475 Coordinated Power System Protection

END OF SECTION

SECTION 01005

SITE SPECIFIC SUPPLEMENTARY REQUIREMENTS

1. CONDUCT OF WORK

1.1 COORDINATION AND WORK HOURS

1.1.1 Coordination with using agencies, to include Howard Hanson Dam Operations and Tacoma Public Utilities (TPU), shall be made through the Contracting Officer to assist the Contractor in completing the work with a minimum of interference and inconvenience.

1.1.2 Work hours in the construction area will be restricted to 7:00 a.m. to 3:30 p.m. daily, Monday through Friday, excluding Federal holidays. Work hours other than as specified above shall be coordinated with and approved by the Contracting Officer.

1.2 GENERAL ACCESS REQUIREMENTS

This section describes controls and restrictions regarding site access and Green River watershed activities. The watershed provides drinking water for over 300,000 people and must necessarily be protected during construction. Only authorized personnel (Government personnel or Contractor personnel participating in Government business) may enter the restricted watershed.

1.2.1 Access to Howard Hanson Dam structures will be controlled at an entrance guard station operated by TPU. TPU will issue permits for the Contractor's vehicles on the first occasion they come to the guard station. Access can be expedited by notifying the Tacoma control station, at (206) 502-8346, and the Corps of Engineers Project Office at (206) 886-2911, in advance. Incoming traffic will be restricted from entering the controlled area until proper identification is provided. Access on a regular basis and during other than established working hours will require prior coordination and approval by the Contracting Officer.

1.2.2 Access to the Green River Watershed will be permitted only to those persons actually engaged in operations authorized by the Contractor by permit from (TPU). Access to the watershed is permitted only at such times as personnel are on direct work assignment. Wandering from the work area or engaging in any activity other than that authorized is not permitted. If there is probable cause to believe that there has been a violation of the regulations, then any such vehicle or vehicles as may appear to be involved in such violations may be stopped and inspected by TPU or the Contracting Officer's Representatives. The refusal by the operator of any such designated vehicle to permit such inspection may be deemed sufficient reason to deny that operator further access to the watershed.

1.2.3 The Contractor shall submit a complete listing of Contractor personnel, including job title and identification credential number, who will be working on the project. This listing shall be updated as needed to ensure that the Government has been notified of any changes of Contractor Personnel in advance of new personnel engaging in work on the project. The Government will allow access to the controlled areas of only the Contractor Personnel authorized in advance and included on the employee listing. The list will be submitted the week prior to personnel arrival on-site. The list shall be revised on each occasion of change of employees and the revised list provided to the Contracting Officer during weekly meetings.

1.2.3.1 Identification Credentials

Contractor personnel shall either be issued a photo identification card (ID) by the Contractor or agree to provide their individual vehicle driver's license as appropriate identification credential. In either case, the identification number shall be included on the listing required above. If the Contractor determines to issue ID cards to its employees, the following information shall be included:

Contractor Identification and Card Number Indicating Employees:

- o Full Name
- o Current Address
- o Birth Date
- o Recent Photograph
- o Height
- o Weight
- o Hair Color
- o Eye Color

Contractor personnel shall be instructed to present identification credential upon request by proper authority as established by the Contracting Officer.

1.2.3.2 Employee Termination

If a Contractor employee resigns or is terminated the Contracting Officer, or designated representative shall be so notified at the earliest opportunity, but in no case later than the start of the succeeding workday.

1.2.4 The Contractor shall instruct all persons who enter the watershed on its behalf the nature of the watershed and to the serious consequences arising from failure to comply with access guidelines. The Contractor shall provide a copy of these guidelines to all employees and agents who enter the watershed. A copy of these guidelines shall also be posted in a conspicuous place at each worksite. All gates at the worksite are provided to control access and shall be kept locked at all times, except as otherwise specifically approved by the Contracting Officer.

1.3 ACCESS ROADS

The Contractor is required to pay to TPU the rate of $15.90 ~~21.40~~/trip for hauling heavy equipment (over 14,000 lbs GVW) from the County Road up the Tacoma Headworks Access Road to Howard Hanson Dam. The fees are to reimburse TPU for required road repair. The Contractor shall keep records of road use in the watershed and to provide 3 copies of road use trip and mileage records to the Contracting Officer. The Contractor is required to coordinate with TPU's Watershed Manager, Brian King, (360) 886-2018 for forms and frequency of payment. No separate payment or reimbursement will be made for these costs. All costs for the road use fees in this paragraph shall be included in payment Item No. 0002.

1.3.1 Access Road "A"

The Government and its contractors have the right to use the one-lane access road (Access Road "A" - see Contract Drawings) to the dam site. However, usage of the road by the Government or its contractors is neither superior nor inferior to the rights of any other party. All parties authorized to use the road (including the Forest Service, the Department of Health and Human Services, and the City of Tacoma) do so on an equal basis. The speed limit is 35 mph on lengths of paved road, and 25 mph on gravel lengths. Original constructed widths vary from 18 feet to 22 feet. Approximately one mile from the guard station

toward the damsite is a one-lane bridge (originally a railroad bridge); all vehicles are required to come to a complete stop before proceeding onto this bridge.

1.3.2 Spillway and Outlet Works Bridges

These bridges were designed according to the 1957 AASHO Standard Specifications for Highway bridges for H 20-S16-44 loading, which is currently designated by AASHTO as HS 20-44 loading. Contractor may use spillway and outlet works bridges for access to the work areas, but in no case shall the Contractor exceed design loadings, as furnished herein, for either of these structures.

1.4 CONTRACTOR'S VEHICLES

Contractor's vehicles shall carry proof of insurance at all times. Equipment operations shall follow Traffic Control Plan at all times as required under Section 01501.

1.5 ACCESS KEYS

1.5.1 Keys are required for access beyond the gate at the guard station and will be provided by the Contracting Officer.

1.5.2 The Contractor shall be responsible for Government-owned keys issued for this contract.

1.5.3 Upon completion of the work at the project site, or upon request of the Contracting Officer, the key or keys relevant to the completed areas shall be returned.

1.5.4 Should the Contractor lose a key:

a. the Contracting Officer shall be notified, in writing, within three (3) working days after the loss is discovered and

b. should the key not be found before final acceptance, the final contract payment shall be reduced by $100 for each key not returned.

1.6 CONTRACTOR SECURITY

The Corps of Engineers will not be responsible for providing security for Contractor-owned/controlled equipment, supplies, or materials. The Contractor shall provide those necessary security measures.

1.7 SANITARY FACILITIES AND LITTER CONTAINERS

1.7.1 Human excrement or urine shall not be voided or deposited on the watershed, nor shall any garbage, food waste, or other form of decaying, foul, noxious or putrescible matter, either liquid or solid, be thrown, spread or otherwise deposited on, or beneath the surface of the ground.

1.7.2 The Contractor shall provide approved sanitary facilities and litter containers at all work sites. Sanitary facilities and litter containers shall be placed on flat surfaces at convenient locations and adequately protected against upset. Location of sanitary facilities and litter containers shall be subject to approval of the Contracting Officer. Sanitary facilities and litter containers shall be maintained in a satisfactory condition and the contents disposed of in a manner approved by the Contracting Officer.

1.8 CAMPS, HOUSING FACILITIES, AND ANIMALS

No camps or housing facilities may be constructed or maintained within the watershed area. Camping is not allowed. No domestic animals, such as dogs, cats, ferrets, or other are allowed in the watershed or on the worksite.

1.9 EROSION CONTROL

All construction activities shall be conducted in a manner to prevent erosion or siltation. Where culverts, ditches or drainage are necessary for protection of surface water quality, such facilities shall be constructed by the Contractor per the plans and specifications.

1.10 PESTICIDES AND PLANT NUTRIENTS

Pesticides or plant nutrients shall not be applied to the watershed without prior approval of the Contracting Officer. Approval shall be required for each specific activity.

1.11 REGULATORY REQUIREMENTS

1.11.1 All activities in the Green River Watershed shall be conducted in compliance with all other applicable Federal, state, and local laws, rules and regulations for the protection of domestic water supplies.

1.11.2 The project site lies within a forested area. The Contractor shall comply with all forest fire laws, rules and regulations of the State of Washington and such additional Department of Natural Resources and City of Tacoma Public Utilities guidelines as are deemed necessary. A copy of all pertinent fire regulations shall be posted at all work sites. All Contractor tools and equipment shall be kept in serviceable condition, and shall at all times be readily available for fighting fires. Failure to comply with the fire control regulations will be a material breach of contract.

1.12 UTILITY OUTAGES

Contractor shall coordinate utility outages with the Contracting Officer at least 7 days in advance. Outages shall be kept to a minimum and any one outage shall not last more than 2 hours.

1.13 PROTECTION OF PROPERTY

In addition to requirements of the Contract Clauses, the Contractor shall protect all property, publicly owned or private, within or in the vicinity of the work site. The Contractor shall ensure that it is not removed, damaged, destroyed, or prevented from its normal use unless so designated in the Contract Documents. All property adjacent to the work shall be protected including, but not be limited to, protection from construction generated dust, debris, water, and vibration. Property includes land, utilities, landscaping, markers and monuments, buildings, structures, site and drainage improvements, whether shown on the Contract Drawings or not.

1.13.1 Restoration

If any property is removed, damaged, destroyed, or prevented from its normal use by the Contractor, the Contractor shall restored it to its original condition at no cost to the Government. If the Contractor does interfere with the property's normal use, and does not halt such interference when directed to do so by the Contracting Officer, the Contracting Officer may have such property restored by other means and deduct the cost of restoration from payment due the Contractor.

END OF SECTION

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SECTION 01702

AS BUILT RECORDS AND DRAWINGS

PART 1 GENERAL

1.1 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-11 Closeout Submittals

As-Built Field Data; G

Two sets of the As-Built Field Data (see paragraph 3.1) shall be submitted to the Contracting Officer for review and approval a minimum of 20 calendar days prior to the date of final inspection. If review of the preliminary as-built drawings reveals errors and/or omissions, the drawings will be returned to the Contractor for corrections. The Contractor shall make all corrections and return the drawings for backcheck to the Contracting Officer within 10 calendar days of receipt. When submitted drawings are accepted, one set of marked drawings will be returned to the Contractor for the completion of the as-built drawings.

As-Built Prints for System Acceptance Testing

One set of marked-up as-built prints shall be furnished at the time of system acceptance testing. These as-built prints shall be in addition to the submittals of marked-up as-built field data.

As-Built Drawings; G

Drawings showing as-built conditions of the project.

The final as-built drawings shall consist of two sets of Electronic Microstation CADD files on CD-ROM showing each drawing, and 2 sets of prints. Final drawings shall incorporate contract changes and plan deviations. Lines, letters, and details will be sharp, clear, and legible. Additions or corrections to the drawings will be drawn to the scale of the original drawing. Documents shall be current.

1.2 PAYMENT

Failure to submit final as-built drawing files and marked prints as specified shall be cause for withholding any payment due the Contractor under this contract. Approval and acceptance of the final as-built record drawings shall be accomplished before final payment is made to the Contractor.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 AS-BUILT FIELD DATA

The Contractor shall keep at the construction site two complete sets of full size prints of the contract drawings, reproduced at Contractor expense, one for the Contractor's use, one for the Government. During construction, both sets of prints shall be marked to show all deviations in actual construction from the contract drawings. The color red shall be used to indicate all additions and green to indicate all deletions. The drawings shall show the following information but not be limited thereto:

a. The locations and dimension of any changes within the building or structure.

b. Changes in details of design or additional information obtained from working drawings specified to be prepared and/or furnished by the Contractor including, but not limited to, fabrication erection, installation, and placing details, pipe sizes, insulation material, dimensions of equipment foundations, etc.

c. Features designed or enhanced by the Contractor.

d. All changes or modifications from the original design and from the final inspection.

e. Where contract drawings or specifications allow options, only the option actually used in the construction shall be shown on the as-built drawings. The option not used shall be deleted.

These deviations shall be shown in the same general detail utilized in the contract drawings. Marking of the prints shall be pursued continuously during construction to keep them up to date. In addition, the Contractor shall maintain full size marked-up drawings, survey notes, sketches, nameplate data, pricing information, description, and serial numbers of all installed equipment. This information shall be maintained in a current condition at all times until the completion of the work. The resulting field-marked prints and data shall be referred to and marked as "As-Built Field Data," and shall be used for no other purpose. They shall be made available for inspection by the Contracting Officer's representative whenever requested during construction and shall be jointly inspected for accuracy and completeness by the Contracting Officer's representative and a responsible representative of the Contractor prior to submission of each monthly pay estimate. Failure to keep the As-Built Field Data (including Equipment-in-Place lists) current shall be sufficient justification to withhold a retained percentage from the monthly pay estimate.

3.1.1 Field Surveys

The Contractor shall GPS the location of each new pole installed and furnish to the Government with Washington State Plane Coordinates, NAD 1927 North Zone. The pole coordinates shall be furnished to the Government in tabular electronic format (MS Excel or equivalent). THe GPS unit used to survey pole locations must be accurate to within + 10 feet horizontal distance.

3.2 AS-BUILT ELECTRONIC FILE DRAWINGS

3.2.1 Government Furnished Computer Aided Design and Drafting (CADD) Drawings

No earlier than 5 days after award the Government will have available for the Contractor one set of MicroStation electronic file format contract drawings to be used for preparation of as-built drawings.

The electronic file drawings will be available on either 89 mm (3-1/2 inch) 1.44 MB floppy disks or ISO-9660 CD-ROM, as directed by the Contracting Officer. The Contractor has 5 days after the receipt of the electronic file to verify the usability of the MicroStation files, and bring any discrepancies to the attention of the Contracting Officer. Any discrepancies will be corrected within 5 days and files returned to the Contractor**.**

3.2.2 Contractor Prepared As Built Drawings

The Contractor shall incorporate all deviations from the original contract drawings as recorded in the approved 'As-built Field Data' (see paragraph 3.1). The Contractor shall also incorporate all the written modifications to the contract drawings which were issued by amendment during the bidding period or by modification after award of the contract. All revisions and changes shall be incorporated, i.e. items marked "deleted" shall be deleted, clouds around new items shall be removed, etc. The Contractor shall prepare the complete set of preliminary final and final as-built drawings in MicroStation electronic file format. The electronic file format, layering standards and submittal requirements are specified in the paragraph "Electronic File Format Requirements."

3.2.2.1 Drafting Quality

The drafting work shall be performed by Certified Engineering Technicians and/or personnel proficient in the preparation of CADD drawings. The as-built drawings shall be done in a quality equal to that of the originals. Line work, line weights, lettering, and use of symbols shall be the same as the original line work, line weights, and lettering, and symbols. If additional drawings are required they shall be prepared in electronic file format under the same guidance.

3.2.2.2 Marking of Final Drawings

When final revisions have been completed, each drawing shall be identified with the words "AS-BUILT" in block letters at least 3/8-inch high placed above the title block if space permits, or if not, below the title block between the border and the trim line. The date of completion and the words "REVISED AS-BUILT" shall be placed in the revision block above the latest revision notation.

3.2.3 Electronic File Format Requirements

3.2.3.1 General

The MicroStation electronic file(s) deliverable shall be in MicroStation 'DGN' binary format. All support files required to display or plot the file(s) in the same manner as they were developed shall be delivered along with the files. These files include but are not limited to Font Libraries, Pen Tables, and Referenced files.

3.2.3.2 Levels

Leveling shall remain as provided in the electronic files. An explanatory list of which levels are used in each drawing, including any additional levels needed to complete incorporation of the As-Built data, shall be provided with each submittal.

3.2.3.3 Electronic File Deliverable Media

All electronic files shall be submitted in ISO 9660 format CD-ROM (CD). Zip drive disks shall not be provided. Each CD shall have a clearly marked label stating the Contractor's firm name, project name and location, submittal type (AS-BUILT), and date the CD was made. Each submittal shall be accompanied by a hard copy transmittal sheet that contains the above information along with tabulated information about all files submitted, as shown below:

Electronic File Name	Plate Number	Drawing Title

Electronic version of the table shall be included with each submittal set of disks.

3.3 SUBMITTAL OF AS-BUILT DRAWING DELIVERABLES

3.3.1 Final As-Built Record Drawings

After completion of all work and acceptance by the Contracting Officer and no later than 30 calendar days after completion of the final inspection the Contractor shall submit final CADD as-built record drawings. The Government will review all as-built record drawings for accuracy and conformance to the drafting standards and other requirements contained in DIVISION 1 GENERAL REQUIREMENTS. They shall be complete in all details and identical in form and function to the contract drawing files supplied by the Government. Any transactions or adjustments necessary to accomplish this is the responsibility of the Contractor. The Government reserves the right to reject any drawing files it deems incompatible with the specified CADD system. Paper prints, drawing files and storage media submitted will become the property of the Government upon final approval. All drawings from the original contract drawings set shall be included, including the drawings where no changes were made. The Government will review all final as-built record drawings for accuracy and conformance to the drafting standards and other requirements contained in DIVISION 1 GENERAL REQUIREMENTS. The drawings will be returned to the Contractor if corrections are necessary. Within 7 calendar days the Contractor shall revise the CADD files accordingly at no additional cost.

END OF SECTION